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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,371	01/30/2004	Aland B. Adams	200314774-1	7916

			EXAMINER
22879	7590	12/06/2006	LE, DIEU-MINH T

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ART UNIT	PAPER NUMBER
2114	

DATE MAILED: 12/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/769,371	ADAMS ET AL.
	Examiner	Art Unit	
	Dieu-Minh Le	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *19 September 2006*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-20* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-20* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *30 January 2004* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a) ☐ All   b) ☐ Some * c) ☐ None of:

　　　1. ☐ Certified copies of the priority documents have been received.

　　　2. ☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. · This Office Action is response to the communication filed on 09/19/06 in application 10/769,371.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ovadia (U.S. 2005/0175341) in view of Srikrihna et al. (U.S. 2005/0129005 hereafter referred to as Srikrihna).

As per claim 1:

Ovadia substantially teach the invention. Ovadia teaches:
- At least one machine-readable [col. 18, claim 39] media comprising:
- first program code to determine a route [*routing,* abstract, col. 13, par. 163;] path through a gateway to a storage area network (*SAN*) for each of a plurality of

addresses of an interface of a server [abstract, fig. 2,
col. 18, claim 30-31 and 42];

- the first program code to determine the route path [fig.
2, col. 7, par. 85];

- second program code to configure the gateway with the
route paths [fig. 2, col. 7, par. 90; col. 8, par. 103-
104].

Ovadia does not explicitly address:

- an algorithm to one or more numerical values associated
with the address.

However, Ovadia does disclose capability of:

- A method and system for routing data to and from storage
area network (SAN) via **SAN gateway** [abstract, fig. 2, col.
4, par. 0046] comprising:

- a connectivity among servers, host computer, SAN,
switches, **gateway**, etc… via **network interfaces (i.e.,
server, SAN, SAN gateway, data devices network interfaces/
NIC)** [fig. 2, col. 3, par. 0041 through col. 4, par. 0046];

- **virtual circuit networking algorithm, data sizing via
specific burst algorithm, data traffic shaping algorithm,
etc…** [col. 4, par, 54; col. 6, par. 73; col. 13, par. 157-
158].

In addition, Srikrishua explicitly teaches:

- A method, **computer readable medium**, and apparatus for
determining an optimal routing based upon path quality of
routes in a mess network including gateway, servers,
storage area network (SAN) or mass storage device

[abstract, fig. 1-4, col. 1, par. 0002; col. 5, par. 0061]
comprising:

- *a control algorithm used via routing path quality, data latency variable, data transmission QOS, routing statistic via data packet addresses* [col. 6, par.0076-0081] as well as a *first, second, third routing measurement determination* [fig. 5, col. 5, par. 0063-0070.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to first realizing Ovadia's *virtual circuit networking algorithm, data sizing via specific burst algorithm, data traffic shaping algorithm* as being the an algorithm to one or more numerical values associated with the address as claimed by Applicant. This is because Ovadia explicitly performed multiple data routing (i.e., paths), data configuring, data transmission optimization via routing algorithm in supporting the most data routing efficiency and maximizing data communication links system including failure detection and recovery via data/error monitoring, detecting, and correcting processes (i.e., failover). By utilizing these capabilities, the communication path between the data storage device or storage area network and information data communication system (i.e., host/servers/gateways/switches environment) can be directed or redirected promptly and functioned properly during failover switching process in supporting the network routing and switching operation; second, by applying the *control algorithm used via routing path quality, data latency variable, data transmission QOS, routing statistic via data packet addresses* as well as a *first, second, third routing measurement determination*

as taught by Srikrishua in conjunction with the method and
system for routing data to and from storage area network (SAN)
via SAN *gateway* as taught by Ovadia, the multi-path routing
communication SAN networking system including gateway and
switches capabilities (i.e., OS failover or mess network) can
enhance its operation performance, more specifically to ensuring
the best routing path applied along with its error detected,
corrected routing addresses and protocol in the storage area
network (SAN) area.

This modification would have been obvious because a person
having ordinary skill in the art would have been motivated to do
so to improve the routing system operation availability and
network/system performance therein with a mechanism to enhance
the data routing connectivity, data debugging, data reliability,
and data throughput which eventually will increase its
performance, such as data throughput between internal and
external devices.

In addition, it would have been obvious to one having
ordinary skill in the art at the time the invention was made to
realize that a *machine-readable media* is a necessary item for
such client-server, computer/host- server/controller storage
area networking (SAN) system, more specifically, data routing
and communication in supporting fail-over process. Since the
software or program codes for completing a communication
obviously needs a means for instruction or code means resided
within the *machine-readable media* for performing the data
routing, storing, receiving, transmitting operation via the SAN
capability.

As per claims 2 and 6:

Ovadia further teaches:

- wherein each of the addresses comprises an interface card number, a target number, and a logical unit number (LUN) and wherein the first program code determines the route path for each of the addresses by applying the algorithm to the interface card number, the target number, and the LUN *(i.e., a connectivity among servers, host computer, SAN, switches, gateway, etc... via network interfaces (i.e., server, SAN, data devices network interfaces/ NIC)* [fig. 2, col. 5, par. 61; col. 11, par. 134];

- third program code to determine the plurality of addresses based on configuration information of the server (i.e., first, second, and third addressing used for data routing and configuration of the server via SAN) [col. 8, par. 105].

In addition, Srikrishua explicitly teaches:

- A method, *computer readable medium*, and apparatus for determining an optimal routing based upon path quality of routes in a mess network including gateway, servers, storage area network (SAN) or mass storage device [abstract, fig. 1-4, col. 1, par. 0002; col. 5, par. 0061] comprising:

- a control algorithm used via routing path quality, data latency variable, data transmission QOS, routing statistic via data packet addresses [col. 6, par.0076-0081] as well as a first, second, third routing measurement determination [fig. 5, col. 5, par. 0063-0070.

- *a first, second, and third data routing configuration and measurement used to support the data routing and management through the storage area network (SAN)* [col. 7, claims 1-7].

As per claims 3-5:

Ovadia further teaches:

- the interface card number, a target number, and a logical unit number (LUN) *(i.e., a connectivity among servers, host computer, SAN, switches, gateway, etc... via network interfaces (i.e., server, SAN, data devices network interfaces/ NIC*) [fig. 2, col. 5, par. 61; col. 11, par. 134];

- the second program code configures the gateway to route to a first interface of the gateway [fig. 2, col. 7, par. 90].

Ovadia does not explicitly address:

- modulo two of the sum.

However, Ovadia does disclose capability of:

- *virtual circuit networking algorithm, data sizing via specific burst algorithm, data traffic shaping algorithm, etc...* [col. 4, par, 54; col. 6, par. 73; col. 13, par. 157-158].

In addition, Srikrishua explicitly teaches:

- A method, *computer readable medium*, and apparatus for determining an optimal routing based upon path quality of routes in a mess network including gateway, servers,

storage area network (SAN) or mass storage device
[abstract, fig. 1-4, col. 1, par. 0002; col. 5, par. 0061]
comprising:

- a control algorithm used via routing path quality, data
latency variable, data transmission QOS, routing statistic
via data packet addresses [col. 6, par.0076-0081] as well
as a first, second, third routing measurement determination
[fig. 5, col. 5, par. 0063-0070].

- *routing hop counts adding and configuration in supporting
the SAN routing process* [col. 3, par. 0035].

Therefore, it would have been obvious to a person having
ordinary skill in the art at the time of Applicant's invention
to realize that the combination of Ovadia's *virtual circuit
networking algorithm, data sizing via specific burst algorithm,
data traffic shaping algorithm* and the Srikrishua's *routing hop
counts adding and configuration in supporting the SAN routing
process* do teach such applicant's **modulo two of the sum**
limitation. This is because both Ovadia and Srikrishua do
applied the routing algorithm therein in supporting the data
routing (i.e., paths), data configuring, data transmission
optimization. By utilizing these capabilities, the modulo two of
the sum feature is obvious embedded and used therein in order to
achieve the best routing results for the SAN data communication.
This is further obvious because this function is notoriously
well known in the art of data computing arena, such as data
routing and configuration networking environment for the same
reasons set forth as described in claim 1, **supra.**

As per claims 7-14:

Due to the similarity of claims 7-14 to claims 1-6 except
for system comprising server interfaces, gateways, LUN,
switches, fibre channel, SCSI interface, etc… instead of the
machine readable media having program codes, LUN, server
interfaces, etc… as described in claims 1-6; therefore, these
claims are also rejected under the same rationale applied
against claims 1-6. **In addition, all of the limitations have
been noted in the rejection as per claims 1-6.** Such as **_a
connectivity among switch, hubs, router, server, via SCSI,
Ethernet, fibre channel interfaces are illustrated by Ovadia as
depicted in figures 2_**, col. 3, par. 0041 through col. 4, par.
0046]. In addition, Ovadia explicitly demonstrated **_the network
logic in determining routing path for the SAN_** [abstract, col. 4,
par. 0046]. Srikrishua explicitly teach a method, **_computer
readable medium_**, and apparatus for determining an optimal
routing based upon path quality of routes in a mess network
including **_gateway, servers, storage area network (SAN) or mass
storage device_** [abstract, fig. 1-4, col. 1, par. 0002; col. 5,
par. 0061].

<u>As per claims 15-20</u>:

Due to the similarity of claims 15-20 to claims 1-6 and 7-
14 except for a method comprising server interfaces, LUN, modulo
sum, etc… instead of the machine readable media having program
codes, LUN, server interfaces, etc…as well as system comprising
server interfaces, gateways, LUN, switches, fibre channel, SCSI
interface, etc… as described in claims 1-6 and 7-14,
respectively; therefore, these claims are also rejected under
the same rationale applied against claims 1-6. **In addition, all
of the limitations have been noted in the rejection as per**

claims 1-6. Such as *a connectivity among switch, hubs, router, server, via SCSI, Ethernet, fibre channel interfaces are illustrated by Ovadia as depicted in figures 2*, col. 3, par. *0041 through col. 4, par. 0046*]. In addition, Ovadia explicitly demonstrated *the network logic in determining routing path for the SAN* [abstract, col. 4, par. 0046].. Srikrishua explicitly teaches a method, *computer readable medium*, and apparatus for determining an optimal routing based upon path quality of routes in a mess network including *gateway, servers, storage area network (SAN) or mass storage device* [abstract, fig. 1-4, col. 1, par. 0002; col. 5, par. 0061].

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5.   A shortened statutory period for response to this action is set to expired THREE (3) months, ZERO days from the date of this letter.   Failure to respond within the period for response will cause the application to be abandoned. 35 U.S.C. 133.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu-Minh Le whose telephone number is (571) 272-3660.   The examiner can normally be reached on Monday - Thursday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be

reached on (571)272-3644. The Tech Center 2100 phone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINER
ART UNIT 2114

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